

CLAIMS:

1. A magneto-optical recording medium comprising a magneto-optical recording layer and an auxiliary magnetic layer, wherein a recorded magnetic domain of said magneto-optical recording layer is magnetically transferred to said auxiliary magnetic layer upon irradiation with a reproducing radiation, whereby a larger magnetic domain than said recording magnetic domain of said magneto-optical recording layer can be read back from said auxiliary magnetic layer at the time of reproduction by virtue of the magnetic characteristics of said auxiliary magnetic layer, and wherein said auxiliary magnetic layer comprises a stack including at least two sub-layers which are anti-ferromagnetically coupled through a non-magnetic metallic layer.
2. A recording medium according to claim 1, wherein said sub-layers both consist of a rare-earth transition-metal material.
3. A recording medium according to claim 1 or 2, wherein said sub-layers have substantially the same composition.
4. A recording medium according to claim 1, 2 or 3, wherein said rare-earth transition-metal material comprises GdFeCo.
5. A recording medium according to claim 1, 2 or 3, wherein said rare-earth transition-metal material comprises GdFe.
6. A recording medium according to any one of the preceding claims, wherein said non-magnetic metallic layer is an Ru layer.
7. A recording medium according to claim 6, wherein said Ru layer has a thickness ranging from 0.5 nm to 1.5 nm.

8. A recording medium according to claim 6, wherein said Ru layer has a thickness of about 0.9 nm.

9. A recording medium according to any one of the preceding claims, wherein
5 the Kerr rotation or ellipticity of the recording stack has a larger magnitude for the antiparallel than for the parallel orientation of the sublayer magnetizations.

10. A recording medium according to any one of the preceding claims wherein the storage layer and the auxiliary layer are coupled over a non-magnetic interlayer.

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11. A recording medium according to any one of the preceding claims wherein the auxiliary layer and the intermediate layer are coupled at least in a temperature range below the readout temperature by exchange interaction.

15 12. A method of manufacturing a magneto-optical recording medium comprising a magneto-optical recording layer and an auxiliary magnetic layer, wherein a recorded magnetic domain of said magneto-optical recording layer is magnetically transferred to said auxiliary magnetic layer upon irradiation with a reproducing radiation, whereby a larger magnetic domain than said recording magnetic domain can be read back from said auxiliary
20 magnetic layer at the time of reproduction by virtue of the magnetic characteristics of said auxiliary magnetic layer, said method comprising the step of forming said auxiliary magnetic layer by generating at least two sub-layers which are anti-ferromagnetically coupled through a non-magnetic metallic layer.